

# **ABSTRACT**

The present invention discloses a computer implemented signal analysis method through the Hilbert-Huang Transformation (HHT) for analyzing acoustical signals, which are assumed to be nonlinear and nonstationary. The Empirical Decomposition Method (EMD) and the Hilbert Spectral Analysis (HSA) are used to obtain the HHT. Essentially, the acoustical signal will be decomposed into the Intrinsic Mode Function Components (IMFs). Once the invention decomposes the acoustic signal into its constituting components, all operations such as analyzing, identifying, and removing unwanted signals can be performed on these components. Upon transforming the IMFs into Hilbert spectrum, the acoustical signal may be compared with other acoustical signals.